Armenian Theory of Special Relativity

One Dimensional Movement

Armenian Transformation Equations

Direct transformations

$$\begin{cases} t' = \gamma_{z}(v)\left[\left(1 + s\dfrac{v}{c}\right)t + g\dfrac{v}{c^2}x \right] \\ x' = \gamma_{z}(v)(x - vt) \end{cases}$$

and

Inverse transformations

$$\begin{cases} t = \gamma_{z}(v')\left[\left(1 + s\dfrac{v'}{c}\right)t' + g\dfrac{v'}{c^2}x' \right] \\ x = \gamma_{z}(v')(x' - v't') \end{cases}$$

Lorentz Transformation Equations

Direct transformations

$$\begin{cases} t' = \gamma(v)\left(t - \dfrac{v}{c^2}x \right) \\ x' = \gamma(v)(x - vt) \end{cases}$$

and

Inverse transformations

$$\begin{cases} t = \gamma(v')\left(t' - \dfrac{v'}{c^2}x' \right) \\ x = \gamma(v')(x' - v't') \end{cases}$$

Armenian Relations Between
Reciprocal and Direct Relative Velocities

$$\begin{cases} v' = -\dfrac{v}{1 + s\dfrac{v}{c}} \\[2em] v = -\dfrac{v'}{1 + s\dfrac{v'}{c}} \end{cases}$$

Lorentz Relation Between

Reciprocal and Direct Relative Velocities

$$v' = -v$$

Armenian Gamma Functions

$$\begin{cases} \gamma_{\dot{z}}(v) = \dfrac{1}{\sqrt{1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}}} \\[4ex] \gamma_{\dot{z}}(v') = \dfrac{1}{\sqrt{1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}}} \end{cases}$$

Lorentz Gamma Function

$$\gamma(v') = \gamma(v) = \dfrac{1}{\sqrt{1 - \dfrac{v^2}{c^2}}}$$

Armenian Formula for Time-Space Interval

$$\mathfrak{t}^2 = c^2 t'^2 + sct'x' + gx'^2 = c^2 t^2 + sctx + gx^2$$

Lorentz Formula for Time-Space Interval

$$\mathfrak{t}^2 = c^2 t'^2 - x'^2 = c^2 t^2 - x^2$$

Armenian Addition and Subtraction Formulas For Local Velocities

$$\begin{cases} w = \dfrac{u + v + s\dfrac{vu}{c}}{1 - g\dfrac{vu}{c^2}} \\[2em] u = \dfrac{w - v}{1 + s\dfrac{v}{c} + g\dfrac{vw}{c^2}} \end{cases}$$

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Lorentz Addition and Subtraction Formulas For Local Velocities

$$\begin{cases} w = \dfrac{u + v}{1 + \dfrac{vu}{c^2}} \\[2em] u = \dfrac{w - v}{1 - \dfrac{vw}{c^2}} \end{cases}$$

Armenian Relativistic Lagrangian Function
For Free Moving Particle

$$\mathcal{L}_{\acute{z}}(w) = -m_0 c^2 \sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}$$

Lorentz Relativistic Lagrangian Function
For Free Moving Particle

$$\mathcal{L}(w) = -m_0 c^2 \sqrt{1 - \frac{w^2}{c^2}}$$

Armenian Relativistic Energy and Momentum Formulas

$$\begin{cases} E_{\angle}(w) = \gamma_{\angle}(w)\left(1 + \frac{1}{2}s\frac{w}{c}\right)m_0c^2 = \dfrac{1 + \frac{1}{2}s\frac{w}{c}}{\sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}}m_0c^2 \\[4ex] p_{\angle}(w) = -\gamma_{\angle}(w)\left(g\frac{w}{c} + \frac{1}{2}s\right)m_0c = -\dfrac{g\frac{w}{c} + \frac{1}{2}s}{\sqrt{1 + s\frac{w}{c} + g\frac{w^2}{c^2}}}m_0c \end{cases}$$

Lorentz Relativistic Energy and Momentum Formulas

$$\begin{cases} E(w) = \gamma(w)m_0c^2 = \dfrac{1}{\sqrt{1 - \frac{w^2}{c^2}}}m_0c^2 \\[4ex] p(w) = \gamma(w)m_0w = \dfrac{1}{\sqrt{1 - \frac{w^2}{c^2}}}m_0w \end{cases}$$

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First Approximation of the
Armenian Energy and Momentum Formulas

$$\begin{cases} E_{\lambda}(w) \approx m_0 c^2 - (g - \frac{1}{4}s^2)(\frac{1}{2}m_0 w^2) = m_0 c^2 + \frac{1}{2}m_{\lambda}w^2 \\\\ p_{\lambda}(w) \approx -\frac{1}{2}sm_0 c - (g - \frac{1}{4}s^2)(m_0 w) = -\frac{1}{2}sm_0 c + m_{\lambda}w \end{cases}$$

First Approximation of the
Lorentz Energy and Momentum Formulas

$$\begin{cases} E(w) \approx m_0 c^2 + \frac{1}{2}m_0 w^2 \\\\ p(w) \approx m_0 w \end{cases}$$

Armenian Energy and Momentum Formulas
For Rest Particle (w=0)

$$\begin{cases} E_{\angle}(0) = m_0 c^2 \\ p_{\angle}(0) = -\frac{1}{2} s m_0 c \end{cases}$$

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Lorentz Energy and Momentum Formulas
For Rest Particle (w=0)

$$\begin{cases} E(0) = m_0 c^2 \\ p(0) = 0 \end{cases}$$